

Linking Science and Practice

**Linking Exposure/Hazards and
Health Outcomes**

Tulane University EPHT- COE

Outline

- **Background**
- **Hazard → Exposure**
- **Hazards**
- **Health Outcomes**
- **Relating hazards/exposures and health**
- **Issues and limitations**

Background

- **Exposures/hazards**
- **Health outcomes**
- **Linkage of exposures and health**
- **Linkage of hazards and health**
- **EPHT**
- **Data Linkage Report**

Hazard → Exposure

**Hazard (lbs/year) →
Exposure (individual
measure of exposure)**

Hazards

- **Focus on potential hazards**
- **Evaluate the data collection methods**
- **Define small areas**
- **Compute small area estimates of hazards**
- **Examine temporal/spatial distributions**
- **Establish facility in using GIS**

Health Outcomes

- **Focus on health outcomes**
- **Evaluate data collection methods**
- **Confidentiality**
- **Define small areas**
- **Compute small area estimates of health outcomes**
- **Examine temporal/spatial distribution**
- **Establish facility in using GIS**

Linking

- **Use multilevel modeling methods to relate hazard to health outcome**
- **Adjust for covariates**
- **Examine the temporal- spatial relationship (GIS)**
- **Establish facility in use/interpretation of methods**

Issues/Limitations

- **Design and careful interpretation of appropriate maps**
- **Definition of deprivation suitable for US**
- **Establish standards for spatial data on populations, hazards/ exposure**
- **Understanding of problems in analysis of small area data**
- **Limitations of statistical methods**
- **Ecological bias**
- **Facility in use of new methods**